

Data Sheet

400-401/500-501 Threaded All-Welded Diaphragm Seals

FEATURES

- All welded construction ensures a leak-tight, tamper-proof seal
- All 316L SS construction resists corrosive attack from a wide variety of process media
- Flushing connection optional

TYPICAL USES

- Oil and Gas
- Refineries
- Chemical and Petrochemical
- Water and Wastewater
- NACE Compliant Processes
- Biogas and Biodiesel

SPECIFICATIONS

Fill Fluid:	Glycerin, Silicone, Halocarbon®, Syltherm® (see Table 2 on page 2 for more fill fluid options)
Pressure Rating (MAWP):	400/401: 4,400 psi 400 (XHP OPT.): 9,000 psi 401 (XHP OPT.): 5,000 psi 500/501: 500 psi
Connection Style:	400, 500: Threaded 401, 501: Threaded with flushing port
Process Connection Size:	¼ to 1½ NPT Female ¼ to 1 NPT Male
Instrument Connection Size:	¼ or ½ NPT Female
Added Tolerance:	±0.5% typical
Approvals:	CRN, NACE

WETTED COMPONENTS

Diaphragm	Bottom Housing
316L SS	316L SS
Hastelloy® C-276	Hastelloy® C-276
Monel® 400	Hastelloy® C-22
Titanium	Monel®
Tantalum	Titanium

NON-WETTED COMPONENTS

Top Housing	Bolts/Clamp Rings	Nuts
316L SS	Carbon steel	SS
Hastelloy® C-276		
Monel®		
Titanium		



400
Threaded All-Welded
Diaphragm Seal

500
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KEY BENEFITS

- Continuous duty design
- Minimized fill volume
- Suitable for pressures up to 9,000 psi

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TABLE 1 - OPTIONS

Code	Option	400	401	500	501	Notes
LD	SS locking device	•	•			
PU	Pipe plug for flushing connection		•		•	Plug will match bottom housing material
HB	Hastelloy® C-276 upper housing	•	•	•	•	
SE	SS rings and bolts	•	•			1,500 psi Max., 5,000 psi Max. with XHP
HP	High-pressure clamp rings	•	•			9,000 psi Max., 5,000 psi Max. with SE
6B	Cleaned for oxygen service	•	•	•	•	
AW	Single ½ NPT flushing connection		•		•	¾ NPT Female or smaller process connection
DB	Dual ½ NPT flushing connections		•		•	¾ NPT Female or smaller process connection
DK	Dual ¼ NPT flushing connections		•		•	
DU	Instrument welded to seal	•	•	•	•	
MQ	Positive material identification	•	•	•	•	
W1	Dye penetrant testing	•	•	•	•	
CD-5	NACE compliance certificate	•	•	•	•	Stainless, Hastelloy®, or Monel® wetted materials
CD-6	Typical material certification	•	•	•	•	

ORDERING CODE	Example:	02	4	00	S	S	02T	XCK	HP
Process Connection Size									
02 - ¼ NPT Male (400, 500 only)		02							
04 - ½ NPT Male (400, 500 only)									
06 - ¾ NPT Male (400, 500 only)									
08 - 1 NPT Male (400, 500 only)									
25 - ¼ NPT Female									
50 - ½ NPT Female									
75 - ¾ NPT Female									
10 - 1 NPT Female									
15 - 1½ NPT Female									
Diaphragm Seal Type									
4 - 400 Series All-welded clamped seal, threaded process connection			4						
5 - 500 Series All-welded seal without clamps, threaded process connection									
Flushing Port									
00 - No flushing port				00					
01 - With flushing port									
Diaphragm Material									
S - 316L SS					S				
H - Hastelloy® C-276									
J - Hastelloy® C-22									
U - Tantalum (only available with Monel® top and lower housing)									
G - Hastelloy® B									
P - K-Monel® (only available with Monel® top and lower housing)									
Ti - Titanium (only available with a Titanium top and lower housing)									
Bottom Housing Material									
S - 316L SS						S			
H - Hastelloy® C-276									
J - Hastelloy® C-22									
M - Monel® (includes Monel® top housing standard)									
Ti - Titanium (includes Titanium top and housing standard)									
Instrument Connection Size									
02T - ¼ NPT Female							02T		
04T - ½ NPT Female									
Options (if choosing an option(s) must include an "X")								X__	
Fill Fluid (see table 2 on page 3 for more available fill fluids)									
CG - Glycerin									
CK - Silicone SF-96								CK	
CF - Halocarbon®									
Optional Features (see Table 1 above for option list)									
HP - High-pressure clamp rings									HP

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TABLE 2 - FILL FLUIDS

Fill Fluid	Temperature	Viscosity (cSt)	Code	Notes
Syltherm® XLT	-150°F to 500°F (-100°C to 260°C)	1.4	CC	Low temperature applications
Glycerin (food grade)	0°F to 400°F (-18°C to 204°C)	1,300	CG	Direct-mounting only. Not for use with vacuum service
50cSt Silicone	-40°F to 500°F (-40°C to 260°C)	50	CK	
Halocarbon® 4.2	-70°F to 300°F (-57°C to 199°C)	4.2	CF	For use with oxygen/oxidizing process media
50/50 Ethylene Glycol/Water	-25°F to 190°F (-32°C to 88°C)	2.9	CT	
Polypropylene Glycol	-50°F to 325°F (-46°C to 163°C)	54	CV	
Food-grade Silicone	-40°F to 500°F (-40°C to 260°C)	350	CZ	
10cSt Silicone	-40°F to 500°F (-40°C to 260°C)	10	DJ	
Distilled Water	40°F to 185°F (4°C to 85°C)	0.9	FJ	
Ethylene Glycol	20°F to 325°F (-7°C to 163°C)	14	FK	
50/50 Glycerin/Water	15°F to 200°F (-9°C to 93°C)	30	GH	
80/20 Glycerin/Water	15°F to 225°F (-9°C to 107°C)	270	GR	
Syltherm® 800	-40°F to 750°F (-40°C to 400°C)	10	HA	High temperature applications
Calflo® AF	-20°F to 600°F (-29°C to 316°C)	60	KF	High temperature, silicone-free
Mineral Oil	10°F to 400°F (-12°C to 204°C)	75	MY	
Neobee® M-20	5°F to 400°F (-15°C to 204°C)	9.5	NM	Food grade
95/5 Water/Propylene Glycol	40°F to 185°F (4°C to 85°C)	1.0	PY	

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DIMENSIONS in [] are millimeters

400 THREADED SEAL		
A	B	C
3.75	2.88	1.81
[95]	[73]	[46]

500 THREADED SEAL		
A	B	C
2.50	2.88	1.81
[63]	[73]	[46]

